

BEE2027

UNIVERSITY OF EXETER
BUSINESS SCHOOL

MAY 2017

FINANCIAL MARKETS AND DECISIONS I

Module Convenor: Julian Neira

Duration: 90 minutes

The exam consists of four questions. Answer all questions.

Materials to be supplied: None.

Materials to be supplied on request: Scrap paper.

Approved calculators are permitted.

This is a closed note paper.

1. (25 points) Suppose that you are 18 years old and you are considering whether to attend University. You want to estimate the present value of your lifetime earnings. Assume that you would retire at age 65. The annual interest rate is 5%. For all questions draw a timeline and assume that payments occur at the end of the year.
 - (a) (5 points) Suppose you do not attend University but take a job immediately. Assume that you would work for 47 years and make £21,000 a year until you retire. What is the present value of your lifetime earnings?
 - (b) (5 points) Suppose you go to University for 3 years and do not earn any wages until you graduate from University. Assume that after graduating from University, you would work for 44 years at £31,000 per year. What would be the present value of your lifetime earnings?
 - (c) (5 points) Now calculate the present value of your lifetime earnings if you get a master's degree. Assume that if you get a master's, you have no earnings for 4 years and then you work for 43 years at £35,000 per year. What would be the present value of your lifetime income?
 - (d) (5 points) Now calculate the present value of your lifetime earnings if you get a Ph.D. Assume that if you get a Ph.D. you will have no earnings for 8 years and then you work for 39 years at £40,000 per year. What would be the present value of your lifetime income?
 - (e) (5 points) Suppose University tuition is £9000 per year, and you go to University for 3 years. Tuition payments are made at the end of the year. Is it financially worthwhile to attend University? Explain.

2. (25 points) Tom Cruiser is a risk averter who tries to maximise the expected value of $\ln(w)$, where w is his wealth. Tom has £200,000 in safe assets and he also owns a car worth £100,000. But Tom is careless and leaves the top down and the keys in the ignition. Consequently his car will be stolen with probability 0.5. If it is stolen, he will never get it back.
 - (a) (5 points) Calculate Tom's expected utility if he doesn't buy car theft insurance.
 - (b) (5 points) Calculate the certainty equivalent of the lottery he faces if he doesn't buy car theft insurance.
 - (c) (5 points) Suppose that Tom can buy £K worth of insurance at a cost of 0.6K. How much insurance will Tom buy?
 - (d) (5 points) Suppose that Tom can buy £K worth of insurance at a cost of 0.5K. How much insurance will Tom buy?
 - (e) (5 points) Provide economic intuition for your answers in parts (b)-(d).

3. (25 points) A portfolio that combines the risk-free asset and the market portfolio has an expected return of 9 percent and a standard deviation of 11 percent. The risk-free rate is 4.2 percent, and the expected return on the market portfolio is 13 percent. Assume the Capital Asset Pricing Model holds. What expected rate of return would a security earn if it had a .55 correlation with the market portfolio and a standard deviation of 50 percent?

4. (25 points) Please answer the following questions in a paragraph or less.
- (a) (5 points) What is the relationship between perfect and (informationally) efficient markets?
 - (b) (10 points) Discuss the challenges in testing for the validity of the Efficient Markets Hypothesis.
 - (c) (10 points) A traditional advice given by economists is “Never Buy or Sell Individual Stocks”. What is the rationale behind this advice?